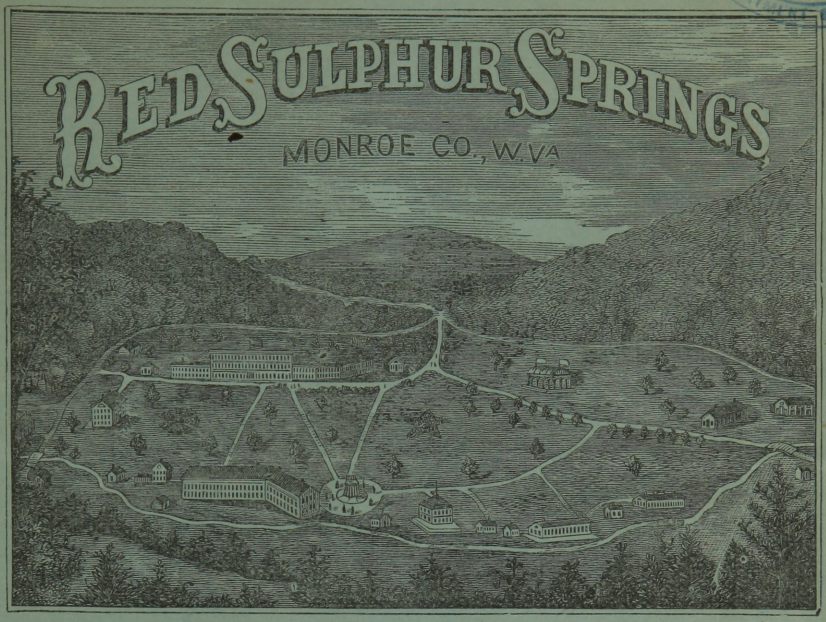


UNEQUALLED

AS A

Mineral Water and Specific

IN MOST FORMS OF

BRONCHIAL OR THROAT DISEASES,

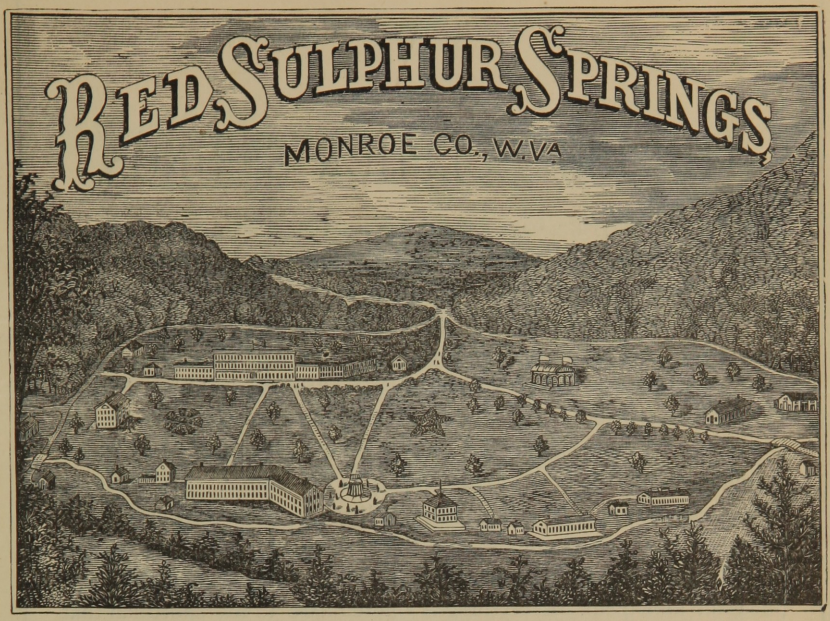
HEMORRHAGES of the LUNGS, TUBERCULAR CONSUMPTION and PULMONARY AFFECTIONS IN GENERAL.

ALSO IN

HYPERTHROPE, OR MORBID ENLARGEMENT OF THE HEART.

1882.

WM. ELLIS JONES, Printer, Richmond, Va.



UNEQUALLED

AS A

Mineral Water and Specific

IN MOST FORMS OF

BRONCHIAL OR THROAT DISEASES,

Hemorrhages of the Lungs, Tubercular Consumption and Pulmonary Affections in General.

ALSO IN

HYPERTHROPE, OR MORBID ENLARGEMENT OF THE HEART.

1882.

THE RED SULPHUR SPRINGS,

Which, for many years, have been famous as curative in all pulmonary disorders, are situated south of the Chesapeake and Ohio road, and twelve miles from Lowell station, accessible from that point by elegant mountain drives, and connected with it by telegraph. The *New river* is but six miles distant, the scenery along which is as enchanting as any in the mountains of Switzerland. The *elevation* above the sea level is between twelve and thirteen hundred feet, and the atmosphere is uncommonly dry and elastic. The scenery, drives and mountain pathways around it all present ever varying beauty to the visitor. The hotel accommodations are of the first order. Within a radius of twenty miles mountain trout are abundant, and New river is full of black bass and perch. The forests abound in game, among which are deer, turkey, pheasant and quail. Everything is offered here to the sportman that can be secured on the Atlantic slopes.

While the unparalleled efficacy of its waters will always render it a great resort for invalids, its beautiful scenery and first-class accommodations recommend it likewise to the tourist and pleasure seeker. To lovers of fine mutton it may not be amiss to mention here, that there is probably none superior in the world to that raised in this district.

The valley, immediately in which the Springs are situated, contain about ten acres, surrounded on all sides by mountain elevations covered with forests. One of the physical phenomena presented is a burning spring with a flame so white that it is invisible in daylight. The country surrounding them presents many romantic features. The accommodation for hot and cold, sulphur or salt baths is not inferior to those of any watering place in the country. The maple and the pine are the predominant trees of the regions, the pine forests in summer perfuming the whole atmosphere with their health giving and stimulating properties.

A splendid brass band adds to the entertainment of the visitors. The Spring-house is about forty feet in diameter. The flow of water is so great that it funishes an abundant supply for drinking, bathing and exportation. Augustus A. Hayes, M. D., of Philadelphia, has subjected the water to a thorough analysis, the details of which are as follows :

Analysis of the Red Sulphur Springs Mineral Water, West Virginia.

By Augustus A. Hayes, M. D., of Philadelphia, Pa.

This water is perfectly colorless and transparent. When agitated, it has an agreeable, sparkling appearance. Its odor is that of hydro-sulphuric acid, mixed with that of earth or clay, the latter being retained after the hydro-sulphuric acid is dissipated or destroyed. In taste it is hepatic and slightly bitter.

By ebullition it does not immediately become turbid; gases escape, and, when reduced in volume by evaporation, deposition takes place.

The specific gravity of this water, compared with pure water at the same temperature and pressure equal, is 1.00029.

Subjected to the influence of chemical reagents, it presents the following characters:

With a solution of chromate of potash, the yellow color becomes a greenish yellow.

With nitrate of mercury, a grayish brown precipitate is formed.

With acetate of lead, the first drops give a brown-colored precipitate; an additional quantity, a yellowish white precipitate.

With bisulphate of copper, at first brown, succeeded by a bulky greenish-gray precipitate.

With a solution of sulphate of silver, a brown, succeeded by a yellowish-white and flocculent precipitate.

With muriate of baryta, a white precipitate insoluble in acids.

With oxalate of ammonia, a white precipitate.

With nitrate of silver and ammonia, white precipitate, which becomes brown and purple in sunlight.

With nitrate of copper and ammonia, a pale bluish-green precipitate is formed; after the first few drops of the reagent have separated, a brown precipitate.

Tincture of iodine, added to a large bulk of the water containing starch dissolved in it, instantly gives a blue color to the starch.

Fifty thousand grains (about seven pints) of the water, from which the hydro-sulphuric acid has been removed, afforded by the usual processes 2698 grain measures of gases, or one volume of gases from 18½ volumes of water.

10 parts of the mixed gases are made up of—

Carbonic acid gas	4.19
Nitrogen gas	4.77
Oxygen gas	1.04
	10.00

A well-sealed bottle containing the hydro-sulphuric acid gas in the

water afforded for 50. parts of water 3.088 of mixed gases, or one volume of gases from less than 17 volumes of water, consisting of—

Carbonic acid gas	1.245	
Nitrogen gas	1.497	
Oxygen gas	.260	
Hydro-sulphuric acid gas	.086	
		3.088

Gaseous contents of a gallon, or 231 cubic inches:

Carbonic acid	5.750	
Nitrogen	6.916	
Oygen	1.201	
Hydro-sulphuric acid	0 397	
		14.264

50,000 grains (about 7 pints) of this water afford by evaporation in the air at 200° F. a light yellowish brown matter, which, after it had been carefully dried, weighed 20.56 grains. At the temperature of 240° F. this residue becomes changed, and suffers a loss of weight, being reduced to 17.55 grains.

This residue contains the saline part of the water, and is composed of—

Silicious earthy matter, containing traces of oxide of iron and ammonia, probably suspended merely	0.70
Sulphate of soda, in a dry state (which forms with the water, 802 grains)	3.55
Sulphate of lime	0.47
Carbonate of lime (lime dissolved in carbonic acid)	4 50
Carbonate of magnesia (magnesia dissolved in carbonic acid, and forming the "fluid magnesia")	4.13
A peculiar substance, containing sulphur combined with organic matter	7.20
	20.55

The peculiar *sulphur compound*, which forms a part of the saline contents of this water, has never been described, if it has ever before been met with. While in the natural state, and out of contact with atmospheric air, it is dissolved in the water, and forms a permanent solution. Air, acids, and other agents separate it from the water in the form of a *jelly*, and alkaline carbonates, alkalies, water, and other agents redissolve it. It has no acid action on test fluids, but bears that character which bases, and forms compounds analogous to salts. In its decomposition ammonia is formed and hydro-sulphuric acid is liberated; or, if heat be employed in the experiment, sulphur is separated. It combines with the oxide of silver, and forms a salt of reddish purple color, in the form of flocculent precipitate, which dissolves in pure water: with

the oxide of lead a yellowish white powder; and with the oxide of copper, a pale blue salt in fine powder. In these compounds it remains unaltered, and may be separated from them and transferred to other bases.

Mixed with a small quantity of water, and exposed to the temperature of 80° F., it decomposes, and emits a most offensive odor of putrefying matter, with hydro-sulphuric acid gas. It is to this property that the hydro-sulphuric acid in the water is due, and to the oxidation of a part of this compound most of the sulphuric acid found in the water may be referred.

In his letter accompanying the analysis, Dr. Hayes enters into an elaborate account of the processes by which he obtained his results and the opinions founded on those results, from which we extract a few that possess peculiar interest. Speaking of the *sulphur compound* he says:

"It is, so far as I know, new and peculiar, and seems to be an azotized base *combined* with sulphur, and so combined as to neutralize the distinctive characters of sulphur. The hydro-sulphuric acid gas (sulphuretted hydrogen) found in the water is produced through the agency of this body, either by its action on the sulphur present, or more probably the substance itself disengages hydro-sulphuric acid before reaching the surface of the earth, abstracting oxygen from air already dissolved in the water.

"The almost entire absence of chlorine, or muriatic acid, is a singular fact. I believe no trace of uncombined sulphur can be found in it in its fresh state, and when I fermented it, hydro-sulphuric acid was the form it appeared in. I deem this a very important distinction, in a medical point of view, and incline to the opinion that *all the sulphur in this compound is in a state fitted to be absorbed in the animal system*, as no other known solution or powder of sulphur is, excepting, perhaps, hydro-sulphuric acid.

"The chemical history of the sulphur compound shows that, like yeast, it has the power of inducing changes among the constituents of another body like those it is itself undergoing. Healthy surfaces and tissues may resist its power, and the water in which it is dissolved may not produce any effect of disturbance on a healthy stomach. Waters containing a minute portion of salt, called hydriodate of potash, may be used as an ordinary beverage without any marked action; but diseased organs and impaired vital action allow of marked effects being produced by such waters. Experiment made on larger quantities of the deposit of the Spring demonstrate the existence of phosphates in small quantities. The origin of this singular substance, which, for past ages, has been poured out from the strata, is a question of great interest. The quantity would indicate that the source of supply can only be the organic matter of rocks constituting an extensive formation. Its composition leads me to infer that we are drawing curative effects, as we

do articles of beauty and luxury, from an older than the present state of creation.

Respectfully yours,

AUGUSTUS A. HAYES.

The Water of the Springs

Is *clear* and *cool*, with a temperature of 51° Farenheit; a temperature at which it should always be used.

It is sold in quart bottles and shipped in boxes, containing two dozen bottles each. Price per box, four dollars; per gross, twenty dollars. It can be procured from A. S. Shafer & Co., general agents, 49 N. Charles street, Baltimore, Md., or their agents in Washington, Philadelphia and Jacksonville, Fla.

The Certain

Effect of these waters to REVIVE the *languishing circulation*, to give a *new direction* and *impetus to the* VITAL ENERGIES in *stimulating glandular secretions*, to ALTER or CHANGE the *chemical composition* of the BLOOD, to REMOVE *obstructions from* the minute *vessels* which accur in CONGESTIONS, IRRITATIONS and INFLAMMATIONS, thus RESTORING the BLOOD and GENERAL ORGANISM to their *natural condition* and to the *performance* of their *natural functions*, have made them *justly* renowned for years, and caused them to be cherished by all who have used them.

Their power to reduce the force and frequency of the pulse, to produce sound and healthful sleep, is almost marvellous.

Entering the Circulation,

The *waters apply* the *medicinal materials* which they hold in solution to the diseased surfaces and tissues, and *reach* the most MINUTE ramifications of the CAPILLARIES, and in *removing* the *morbid condition* of these vessels they DESTROY what is commonly the *primary seat* of DISEASE.

With Proper Use,

They PROVOKE MOST SALUTARY EVACUATIONS, chiefly by *urine;* and their *dynamic* powers, which, in their subtlety, even the investigation of the chemist has yet been unable to analyze, have PRODUCED CHANGES in the system which baffle the observer.

The Waters Are Also Highly Recommended

In the *various forms* of diseases of the BLADDER and KIDNEYS; in JAUNDICE, *chronic* DIARRHŒA, *and* DYSENTERY; in the *most despairing cases* of DYSPEPSIA; in NERVOUS *disorders;* in SCROFULA and other SKIN DISEASES, and the *vast variety* of FEMALE AILMENTS. In *most* instances they have produced complete revolutions in the system, and many are they who bear grateful testimony to their efficacy.

The Hon. Alexander H. Stephens says: "I could scarcely believe my eyes at the sight of the almost miraculous cures of lung and throat diseases that occurred while I was at the Red Sulphur Springs." He speaks enthusiastically not only of the great benefits of the waters of the Springs, but also of the grand Alpine mountain scenery over which the traveler passes in reaching this famous resort.

The following letter from the late Chief Justice Taney, of the Supreme Court of the United States, is only one of very many certificates that might be properly introduced in order to show the beneficial effects of the waters of the Red Sulphur Springs. We quote from his pen as follows:

"The information you have received as to the benefit derived from the Red Sulphur Springs by Mrs. Taney and myself is correct. We spent six weeks or more there in the summer of 1835, and both of us were in bad health when we went there. The journey, however, was taken on Mrs. Taney's account, and by the advice of Dr. Potter and Dr. Buckler. Her health had been failing for several years, and her lungs supposed to be seriously threatened. She complained of a pain in the breast, coughed a good deal, and had an excited and quick pulse. The alarming symptoms were entirely removed by her visit to the Red Sulphur, and she has since enjoyed her ordinary health. It is proper, perhaps, to remark that, although Mrs. Taney felt in some degree the benefit of the water while she remained at the Springs, yet we were not sensible of the extent of the improvement until some time after our return home. Both of us have since had much better health than we had known for years before, and we both have great confidence in the efficacy of these waters.

There are Hotel Accommodations

For about four hundred guests. The TABLE and everything connected with the establishment is of a first-class character. THE CHARGE FOR BOARD ranges from $50 to $75 per month. Transient guests $3 per day.

The Hotel is fitted up with all modern conveniences. Hot and cold BATHS can be had at all times. A *telegraph line* is connected with the establishment. *Medical aid* at hand if needed.

Healthy Amusements

Are a feature of the Springs. SADDLE-HORSES for ladies and gentlemen may be had at reasonable rates, and a FIRST-CLASS BAND is in attendance during the season to enliven the lawn and ball-room. There is a *billiard room* and *bowling alley*, and *croquet, archery* and other recreations are provided for.

The Large Estate

Of ONE THOUSAND FOUR HUNDRED ACRES affords in its own area many charming rambles, and from the "MORTON HEIGHTS" are obtained magnificent views of the surrounding country. A pretty lake has lately been added, in which fish abound, and on which a row-boat can be found to while away an hour.

The Air, as already stated,

In these mountain regions, is exceptionally *elastic, pure* and invigorating, even during the *hottest* days of Summer, and as the evenings are generally COOL, visitors will do well to provide themselves with plenty of shawls and wrappings.

The Springs are Reached

From *Lowel*, on the Chesapeake and Ohio Railway, in about three hours. Carriages are in readiness on the arrival of the morning trains. Sleeping and Parlor cars are on the trains which leave New York or Cincinnati in the afternoon, and Washington or Richmond in the evening, arriving at Lowel next morning.

Rooms may be engaged in advance, and circulars and other information in relation to the Water may be obtained by addressing

GLAVIS & MORTON,
Proprietors Red Sulphur Springs, West Virginia.